the same time the peculiarities of the astragalus of the Sloth, Megatherium and Armadillo.*

The upper articular surface of the astragalus of the Scelidotherium (Pl. XXVI. fig. 4.), presents, in its transverse contour, two convex pulleys, *a* and *b*, and an intermediate concavity, forming one continuous articular surface. The external or fibular trochlea (*a*) is strictly speaking convex only at its posterior part, the upper surface gradually narrowing to a ridge, as it advances forwards, from which, the inner and outer parts slope away at an angle of 35°.

The tibial† convexity (*b*) is more regular and less elevated, it has only half the antero-posterior extent of the outer pulley; its marginal contour forms an obtuse angle at the inner side.

In the Megatherium the upper articular surface of the astragalus is also divided into two trochleæ, of which the one on the fibular side (fig. 3, *a*), is of much greater relative size and extent than the tibial one (*b*), and is raised nearly four inches above the level of the latter, although in the oblique position in which the bone is naturally placed in the skeleton, the highest part of each convexity is on the same level The fibular trochlea differs also from that in the Scelidothere in being regularly convex in the transverse as well as the antero-posterior direction. The tibial convexity resembles that in the Scelidothere, save in its smaller relative size; its internal margin likewise forms an angular projection below the internal malleolus.

The upper surface of the astragalus of the Mylodon, or Megalonyx (?) (Pl. XXVIII. fig. 5.), ‡ differs from that in the Megatherium in having a narrower fibular trochlear ridge.

The astragalus of the Ai (*Bradypus tridactylus*) differs widely from that of either the Megathere, Mylodon (?) or Scelidothere in having a conical cavity on the upper surface, in place of the fibular convexity, in which concavity the distal end of the fibula rotates like a pivot. This mechanism is closely related to the scansorial uses of the inwardly inflected foot of the Sloth.

If the astragalus of an Armadillo§ were placed side by side with that of the

* *Dasypus 6-cinctus*, L., is the species of which I have the astragalus separate, so as to be able to follow out the comparison.

† In distinguishing these trochleæ as fibular and tibial, it is to be understood that the terms relate only to aspects corresponding to the position of those bones, and not that the fibula is articulated to the whole of the trochlea so called: it probably rested only upon the outer facet in the Scelidothere.

‡ This astragalus was found at Santa Fé, in Entre Rios, associated with the remains of the Mastodon and Toxodon; but from its size and form I entertain little doubt that it belonged to a Megatherioid quadruped as large as the Mylodon or Megalonyx. The brief allusion to the astragalus of the Megalonyx in M. Lund's Memoir does not afford the means of determining with certainty this point.

§ See the figures of this bone, given by Cuvier in Pl. x. and xi. Ossemens Fossiles, vol. v. part i.

Megathere, it would be very difficult to determine the analogous parts, especially of the upper surface, unless guided by the intermediate structure presented by the Scelidothere. The upper surface of this bone, in the Armadillo, is, however, divided into two transversely convex trochleæ, separated by a much wider transversely concave surface. The fibular trochlea resembles that of the Scelidothere in having its upper and outer facets sloping away at an acute angle, but without meeting at a ridge anteriorly; this surface is not more raised above the tibial trochlea than in the Scelidothere.

The inner trochlea differs from that of the Scelidothere in having a greater relative antero-posterior extent, and in forming, in place of an uniform convex surface, a trochlea similar in structure to that on the outer side. The extent of rough surface on the upper part of the astragalus intervening between the articular surface for the bones of the leg, and that for the scaphoides is extremely small in the Megathere and Mylodon (?); it is relatively greater in the Scelidothere; it is still more extensive in the Armadillo; but is the longest in the Sloth. The anterior extremity of the astragalus which is entirely occupied by the scaphoid articular surface is very peculiar in the Scelidothere (Pl. XXVI. fig. 2.): it presents one convex and two concave facets, which, however, form part of one continuous articular surface: the convex facet forms the internal part of the surface, and presents a rhomboidal form with the long axis vertical. The concave facets (*c* and *d*) are extended transversely and placed one above the other; they are slightly concave in the transverse, and nearly flat in the vertical directions.

In the Megatherium (fig. 1.) the scaphoid surface of the astragalus is divided only into one concave and one convex portion, both continuous with each other: the concave facet (*c*) corresponds with the upper concavity in the Scelidothere, but is a pretty uniform subcircular depression, fourteen lines in depth: the convex facet, *d*, is continued across the whole breadth of the under part of the scaphoid surface and corresponds with both the inner convex, and lower concave surfaces of the scaphoid articulation in the Scelidothere.

In the Mylodon (?) (Pl. XXVIII. fig. 3.), the articular facet, corresponding with that marked (*c*) in the astragali of the Megathere and Scelidothere, is simply flattened, instead of being concave; the rest of the scaphoid surface corresponds with that in the Megatherium.

In the Armadillo the scaphoid articular surface is undivided and wholly convex: in this part of the astragalus, therefore, we find the Scelidothere deviating from the Armadillo further than does the Megathere; while the Mylodon or Megalonyx (?) most resembles the Armadillo in the configuration of this part of the astragalus.

If we compare the outer surfaces of the astragalus in these quadrupeds,